

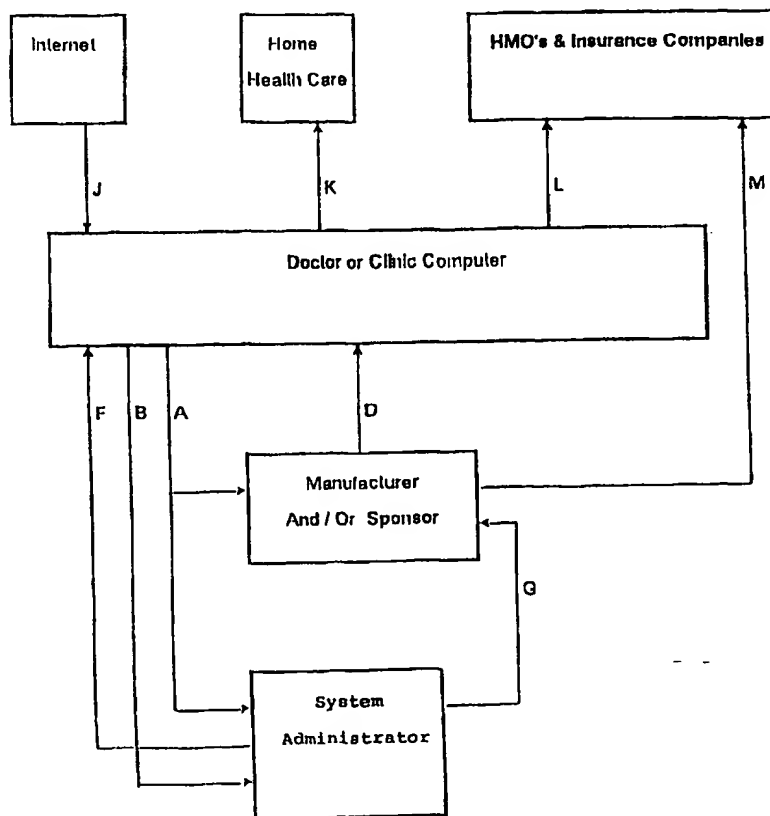


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G06F 17/16	A1	(11) International Publication Number: WO 99/15990 (43) International Publication Date: 1 April 1999 (01.04.99)
(21) International Application Number: PCT/US98/19808 (22) International Filing Date: 23 September 1998 (23.09.98) (30) Priority Data: 60/059,854 24 September 1997 (24.09.97) US (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 60/059,854 (CIP) Filed on 24 September 1997 (24.09.97) (71)(72) Applicants and Inventors: ANDERSON, Michael, R. [US/US]; 8105 Nebo Hills Road, Liberty, MO 64068 (US). KULEZA, John, E. [US/US]; 235 Wethersfield Road, Berlin, CT 06037 (US). (74) Agents: RISTAS, L., James et al.; Alix, Yale & Ristas, LLP, 750 Main Street, Hartford, CT 06103 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

(54) Title: SYSTEM AND METHOD FOR DISPENSING PRODUCTS IN A CLINIC**(57) Abstract**

A system for dispensing a wellness product from clinic inventory, in which a record is generated containing the name of the professional, the name of the patient, and the name of the product identified by bar codes. The computer system in the clinic accumulates information associated with each dispensing of a product to a patient, and compares the accumulated information with a product information file stored in the computer memory, including information on the inventory threshold below which each product is to be reordered. From the comparison, the computer system automatically prepares an electronic product reorder request if the number of units of a particular product falls below the reorder threshold. The clinic computer is electronically linked with the computer system at the supplier of the product in inventory, such that an electronic transmission is communicated to the supplier including a reorder request for the depleted product in inventory.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon		Republic of Korea	PT	Portugal		
CN	China	KR	Kazakstan	RO	Romania		
CU	Cuba	KZ	Kazakstan	RU	Russian Federation		
CZ	Czech Republic	LC	Saint Lucia	SD	Sudan		
DE	Germany	LI	Liechtenstein	SE	Sweden		
DK	Denmark	LK	Sri Lanka	SG	Singapore		
EE	Estonia	LR	Liberia				

SYSTEM AND METHOD FOR DISPENSING PRODUCTS IN A CLINIC

Background of the Invention

5 The present invention relates to the distribution of products, and has particular effectiveness in the dispensing of products to patients or clients during treatment or consultation by a professional.

Particularly in the field of health services such as dermatology, optometry and the like, physicians, optometrists and other professionals often work out of a small office or clinic, where patients are diagnosed and
10 a health product is prescribed, e.g., prescription pharmaceutical, or prescription eyeglasses. Typically, the office or clinic maintains an inventory of such health products with such inventory representing at least several different manufacturers or vendors. It is customary for a sales or other representative of each vendor to visit each office periodically, to
15 determine the adequacy of the actual inventory of that vendor's products, and make adjustments to the inventory if appropriate.

The physician or other professional is usually required to maintain an appropriate record trail of what has been prescribed, and the clinic typically communicates with the patient, the patient's insurance company,
20 HMO, or third party administrator to receive payment for the prescribed product. A nurse or other physician's assistant in the clinic typically takes a prescribed product from inventory, prepares a suitable label with instructions, records the transaction, and gives the product with instructions to the patient before the patient leaves the clinic.

25 Each transaction for dispensing a health product is labor intensive and thus represents a significant cost to the clinic. Furthermore, to the extent product dispensing records are maintained, the task of searching and retrieving these records is not easily accomplished. Whereas conventional pharmacies, hospitals, and other large providers of health
30 services where health products may be dispensed, may very well be able to afford the high cost of installing complex computerized systems for

establishing and maintaining records of product dispensing transactions, the cost of such computerized systems for small offices and clinics, is prohibitive. Yet, there is a growing trend in the health care field for health products to be dispensed at the time the patient visits the health care professional, rather than requiring the patient to leave the clinic with a prescription, which the patient then takes to a pharmacy to be filled.

Summary of the Invention

It is an object of the present invention to provide a system and method, by which the dispensing of a product, for example, at a transaction counter, can be simplified with respect to the necessary documentation and record keeping.

It is a more particular object of the invention, to provide a system and method whereby physicians and clinics can use bar code technology for linking physician, patient, product, and preferably supplier, in the context of local usage or point-of-sale of wellness products.

It is a further object of the invention, that such retail sales transaction be achieved in a manner which automatically provides for communicating with the manufacturer or vendor of such products, to periodically reorder for replacing inventory.

It is yet another object of the invention, to more efficiently link a health care provider's clinic with the manufacturer or vendor of a dispensed health care product, and with insurance companies, HMO's, third party administrators, or others who are obligated to pay for the dispensed product on behalf of the purchaser.

It is still another object of the invention, to provide an automated system and method, whereby the professional's clinic and the product manufacturer or vendor, are linked to a system administrator who provides the computer hardware, computer programs, and associated computer peripherals, for linking the clinic with the suppliers of the product, and for

automating the dispensing transaction, in return for a user fee payable by the manufacturer, distributor, or clinic.

It is another object of the invention, that the system administrator provide information of interest to the professionals, including the availability and/or advantages of new products which the professional may wish to order from manufacturers he currently deals with or other manufacturers.

It is still another object of the invention, to permit authorized representatives of the product manufacturers, to access only those portions of the product inventory records in the clinic, which involved that manufacturer's products, whereby the representative can independently check on product inventory, implement price changes, or add or modify information associated with each product, without involving or disrupting the clinic staff.

One embodiment of the invention is directed to a method for dispensing a wellness product from a products inventory in a clinic where a patient visits to consult with a particular wellness professional, which comprises providing the professional with a tangible prescription template containing a plurality of names of wellness products, each name having adjacent thereto, a unique pattern of coded information. In the consultation area of the clinic, the physician manually selects from the template a particular product to be dispensed to the patient by placing a mark at one of the product names. In the product dispensing area of the clinic, the unique pattern of coded information adjacent the mark is read electronically, and an association is made among the name of the professional, the name of the patient, and the name of the product identified by the mark. From this association, a record is generated containing the name of the professional, the name of the patient, and the name of the product identified by the mark.

In another embodiment of the invention, an electronic association is made, with or without the template, among a particular professional at the

clinic, the name of the patient, and the wellness product identified by the professional for the patient. From this association, a record is generated or a label is printed out including the name of the professional, the name of the patient, the name of the identified product, and preferably the dosage and/or directions for use. Based on this association for the dispensing of a particular wellness product from the inventory of the clinic, the computer system in the clinic accumulates information associated with each dispensing of a product to a patient, and compares the accumulated information with a product information file stored in the computer memory, including information on the inventory threshold below which each product is to be reordered. From the comparison, the computer system automatically prepares an electronic product reorder request if the number of units of a particular product falls below the reorder threshold. The clinic computer is electronically linked with the computer system at the supplier of the product in inventory, such that an electronic transmission is communicated to the supplier including a reorder request for the depleted product in inventory.

According to a system embodiment of the invention, the clinic includes a physical inventory of a variety of wellness products, and a transaction counter where one of the products is dispensed by a clinic staff member to a particular patient after the product has been removed from inventory. A computer system at the clinic has data files including a patient file containing a plurality of digitized patient bar or magnetic codes, each unique to one of a respective plurality of individual patients, and information about the patients including name and preferably address. Other patient information such as drug allergies can also be included. A product file contains digitized information about each of the variety of products including product name, supplier of the product to the clinic, active characteristics affecting wellness, and preferably instructions for use, and a plurality of product bar or magnetic codes, each unique to one product

name. One or more staff members utilize an automatic input template configuration including a first portion containing a bar or magnetic code unique to each professional at the clinic, a second portion containing the patient bar or magnetic codes, and a third portion containing the product bar or magnetic codes. An application program stored in the computer system embodies statements and instructions for the staff member to electronically associate using the automatic input device and the template configuration, one professional with one patient and one or more products, whereby the computer system generates from these associations, a dispensing record or label. The label is then affixed to the product as the product is dispensed to the patient at the transaction counter.

In yet another embodiment, the invention is directed to a system for dispensing wellness products by staff members at a clinic that has a physical inventory of a variety of wellness products, at least some of which carry a bar code product identification number, and a transaction counter where one of the products is dispensed to a patient after removal from inventory. A computer system in the clinic contains data files which include a patient file containing information about the respective patients such as name and address, a product file containing information about each of the variety of products, including digitized product bar codes corresponding to each of the product identification numbers. The data files also include a plurality of document image files, each containing a digital image of a supplementary instruction page which is applicable to the use of one or more products. An application program stored in the computer embodies statements and instructions for generating a dispensing data entry screen display having a plurality of fields for prompting a staff member to enter data using a keyboard and/or mouse, bar code reader, or mag stripe reader, or similar data input device. These data include the name of the professional, the name of the patient, the name of the product to be dispensed to the patient, and the file name of one or more of the document

image files. From the data entered in the fields, the computer generates a dispensing label containing the patient's name, the professional's name, the associated product name, the active characteristics of the product, instructions for use, and a document distinct from the label, constituting a
5 supplementary instruction page.

Thus, one familiar with the dispensing of health products directly through the health care provider, can well appreciate the efficiencies that can be achieved from use of the system and method of the present invention. The documents necessary for the dispensing transaction are
10 automatically prepared; past records are maintained; product inventory is automatically maintained; payment through the purchaser's insurance company or the like is automatically processed. Moreover, the long standing relationship between product manufacture and the clinic is in one sense maintained in that the manufacturer's representative can still visit
15 each office, check inventory, and, perhaps update the records to reflect changes in inventory, but in another sense this relationship is improved, through automatic reordering. In addition, the manufacturer can arrange through the system administrator, to have advertising information communicated to the clinic through the dedicated equipment.

20 The improvement in the operating efficiency and records reliability among the clinic and manufacturer, and among these entities and the insurance companies, requires little capital investment on their parts. In a key role not previously utilized in this type of product dispensing environment, a central system administrator places the equipment (as by
25 sale or lease) in the clinic and links these entities, trains these entities, and receives compensation, e.g., a transaction fee for each product dispensed.

In the preferred embodiment, the present invention dispenses pharmaceuticals, automatically orders products, shortens the distribution process, and adds revenue to the practice. Furthermore, this invention
30 preferably includes:

1. The ability of corporations to advertise with marquees, wallpaper, screen savers, and advertising on the physician reports and transaction receipts. This form of advertising is dynamic, and easy to change.
- 5 2. Enhancing the physician's and clinic's desire to sell a variety of products, increasing their ability to generate revenue, with minimal financial investment.
3. The ability of HMO's and insurance companies to supply pharmaceuticals to their patients at the best possible price.
- 10 When an HMO purchases directly from the pharmaceutical manufacturer, they save the cost of wholesalers, retailers, and pharmacists. Also, the HMO can arrange with the clinic to establish an approved formulary which can be transmitted and updated electronically through the system.
- 15 4. The ability to track pharmaceutical samples, products used in the clinic, as well as purchased pharmaceuticals. A manufacturer can identify the clinics most in need of their products, and thereby focus advertising for maximum impact.
- 20 Also, those particular doctors who dispense many samples can be identified, and sufficient inventory of these samples for such doctors maintained.

Brief Description of the Drawings

25 **FIG. 1** is a schematic representation of a professional office or clinic, showing functional relationships within the clinic and a communications connection to sites external to the clinic, in accordance with the framework of the present invention;

FIG. 2 is a schematic representation of the communications relationships among the clinic, the manufacturer of products to be dispensed through the clinic, third parties who interact with the clinic or

manufacturer, and a system administrator who sets up and coordinates the interaction of these entities, for a fee;

FIG. 3 is a schematic representation of the computer hardware, computer software, and peripheral components associated with a typical
5 implementation of the invention in a clinic;

FIG. 4 is a simplified flow chart of the steps associated with implementing the preferred embodiment of the invention;

FIG. 5 shows a typical product label which can be scanned for entry into the product dispensing portion of the invention;

FIGs. 6, 7, 8 and 9 represent computerized data input records and fields displayed on a monitor screen, by which information about products can be entered via keyboard, mouse, or other input device into the data storage portion of the inventive system;

FIGs. 10A and 10B represent data input screens for entering
15 patient information into a record;

FIG. 11 is a representative data input screen, by which the user of the system can view information about previous prescriptions dispensed to a particular patient;

FIG. 12 is a representation of a data input screen, whereby a patient
20 can be associated with a particular physician, and with a particular prescribed product, based on the doctor's diagnosis and decision made during the patient's visit to the clinic;

FIG. 13 is an example of a bar code template, by which bar code information can be used by the physician or physician's assistant to
25 associate the doctor, the patient, and the product, without the need to enter alpha numeric information into each field of the data input screens such as shown in Figs. 10B and 12;

FIG. 14 depicts a typical dispensing label that is produced by the system according to the present invention, to be affixed to the product as
30 the product is dispensed over a transaction counter, to the patient;

FIG. 15 depicts a typical data entry screen, by which information about companies which supply products to the clinic, can be initially entered and/or modified;

5 **FIG. 16** represents an option for the user of the system to communicate information other than product ordering information, to the product supplier;

FIG. 17 represents a marketing message furnished by the system administrator to the user in the clinic, to encourage the ordering of additional products for inventory;

10 **FIG. 18** depicts the main menu of the preferred embodiment of the invention, as displayed on the monitor.

Description of the Preferred Embodiment

The following description will be made with particular reference to a physician's office or small clinic where, for example, a dermatologist sees
15 a number of patients throughout the day, and based on a diagnosis, prescribes one or more medications (pharmaceuticals). The prescription is written and given to the patient, who then hands the prescription to a nurse, physician's assistant, or the like in the clinic. The assistant obtains the prescribed medication from inventory, prepares an appropriate label
20 with the patient's name, dosage and the like, dispenses the product over a transaction counter to the patient, and then completes associated paperwork. This overall arrangement of a consulting professional, an assistant, a visiting patient, and a product to be dispensed from inventory, may also be found in a variety of other health-related settings and can also
25 be found in related fields, e.g., beauty or wellness. The present invention is most noteworthy in fields where the dispensing of products is highly regulated, e.g., pharmaceuticals.

The generic term "wellness" will be used to encompass all these fields. As used herein, the term "clinic" should also be understood in the

most general sense, to mean any entity organized to provide welln ss
services and dispense a customized product or customized instructions for
product usage. The terms "physician", "physician's assistant" and "patient",
are also to be understood in their general sense, as referring to
5 "professional", "assistant", and "purchaser", respectively. It should also be
understood that as used herein, the term "staff member", refers to any of
the physicians, nurses, assistants, or clerical staff of a clinic.

As depicted schematically in Figure 1, a patient meets with a
professional in a dedicated area of the clinic for consultation. Upon
10 completion of the diagnosis, the professional writes a prescription or in less
regulated contexts merely informs the assistant that a particular product is
to be dispensed to the patient over the transaction counter, prior to the
patient leaving the clinic. While the patient waits in the clinic, the assistant
takes one or more units of the product from physical inventory, enters
15 certain information into the computer system according to the invention
(preferably via bar code reader), and dispenses the product to the patient
along with one or both of a product label and/or other documentation by
which the patient is guided in use of the product. The computer system
according to the invention, communicates with a number of external entities
20 or sites, for reasons and in the manner to be described with respect to
Figure 2.

As shown in Figure 2, the computer system in the clinic interacts with
a computer located at the manufacturer or supplier of the product, with a
computer of the system administrator, and particularly in the case of health-
25 related product dispensing, with a computer at the patient's insurance
coverage provider. Communication may also be made with home health
care providers, labs, and with a global communications network, i.e., the
Internet.

Pharmaceutical dispensing can be classified into prescription.
30 dispensing, sample dispensing, and HMO/insurance company dispensing.

In most states, physicians can dispense directly to the patient with certain constraints. As the prescription products are dispensed, the inventory is depleted, and the computer system according to the invention electronically transmits an order to the manufacturer or distributor (Transmission Path A).

5 A confirmation number is assigned and the manufacturer or distributor immediately ships the product to the clinic. The clinic is no longer burdened with keeping track of the inventory levels or ordering. The manufacturer or distributor is no longer burdened with a staff to receive and enter orders.

10 Most physicians give their patients samples, and the physician should track the samples. Because this requires the physician's time, the tracking is rarely done. Pharmaceutical companies can use the present invention to encourage the physician to track and automatically order additional samples (Transmission Path A).

15 After manufacturing, pharmaceuticals are currently sold to wholesalers, retailers, pharmacists and patients and then usually paid for by an HMO or insurance company. The invention has the ability to sort the patients by HMO or insurance company, and transmit the prescriptions directly to their computers (Transmission Path L). When the product
20 manufacturer or distributor receives the next order, it separates the HMO/insurance sales from the non-HMO/insurance sales. The manufacturer then bills the HMO or insurance company directly (Transmission Path M), ships the full replacement inventory, and bills the physician or clinic for only the products sold to the non-insured patient. For
25 purposes of the present description, the term "covered" patient means that payment for product dispensed by the clinic, will be made to the clinic by a third party, e.g., HMO, insurance company, etc.

This represents a dramatic change in distribution of prescription pharmaceuticals. The patient gets the prescription filled without going to
30 another facility (pharmacist), and the HMO/insurance company purchases

directly from the manufacturer. An HMO or insurance company can receive a list of their patients and prescriptions from every clinic, every day (Transmission Path L). By having access to this information, they can then negotiate with the manufacturer for the best product price, eliminating
5 dealers and distributors. They can also receive a detailed analysis of all products used in the clinic, by department and by physician (Transmission Path L.) Every item used in the delivery of health care can be tracked and the responsible person identified.

Every day, as products are consumed and dispensed, the clinic
10 computer generates orders for transmission to the manufacturer (Transmission Path A). As the transmissions are received, the manufacturer can fill the orders and ship to the appropriate account. If preferred, the order information can be transmitted electronically to the system administrator, then faxed or mailed to the manufacturer
15 (Transmission Paths B and G).

In addition to receiving orders for products and samples, the manufacturer and system administrator can arrange for uploading (1) new prices, (2) information on new products, (3) a new ordering time, and (4) new company address or new company security number (Transmission
20 Path D or F).

Where permitted by law, patient information about pharmaceutical samples could also be transmitted to the manufacturer or system administrator (Transmission Path A or B).

When a home health care company delivers a product, they have a
25 considerable amount of paperwork that must be completed and signed for by the physician and the patient. After displaying the forms for review, both the physician and patient can electronically sign and transmit them directly to the home health care company (Transmission Path K). Upon receipt, the home health care company can dispatch the product.

With the advent of Internet advertising, doctors can view product brochures, "white papers", mini-movies and more. If they like what they see, they can now download the product record directly into their computer and immediately place an order (Transmission Path J).

5 The clinic computer system represented in Figures 1 and 2, has a communication engine which automatically communicates with the appropriate organization, at the appropriate time, and without help from a computer knowledgeable operator. The communication engine resides in the background, running continuously or intermittently and waiting for
10 information to transmit. When the application software within the clinic computer system hands the communications engine a formatted reorder message, the engine immediately calls the appropriate company and transmits the formatted information.

 The receiving company's computer checks the order or
15 communication for integrity and completeness. If complete, it transmits a unique confirmation number that is used as a purchase order or reference number by both the sender and the receiver. For example, the information number can allow for an infinite number of senders to transmit to an infinite number of receivers and generate a unique number without comparing the
20 numbers to those of other senders or receivers. Thus, competing companies can receive transmissions from the same clinics, use the same confirmation numbering system for billing, and be assured their confirmation number is unique, without comparing numbers with other companies.

25 One suitable confirmation number generated by the supplier is in the form 17163019970629, where 171630 is military time (the time the transmission was received) 1997 is the year, 06 is the month and 29 is the day. A suitable confirmation number generated by the clinic, could be in the form 0135A001.035. In this format, the leading 01 can represent the
30 company number, the 3 is the type of transmission, the 5 is the sequence

number running, for example, from 0 through 9, and A-Z, which can identify up to 35 orders per day per manufacturer, the A001 can indicate the account number of the computer, and the three digits following the decimal can indicate the day of the year. If any party loses an order, this type of numbering system provides a clue for all involved parties to locate the order. Each confirmation number is thus unique to any particular order or other communication involving a particular clinic.

The communication engine preferably makes ten attempts at calling the recipient. With each attempt, a phone will ring, e.g., ten times. If the receiving computer does not answer, if the phone lines are down, or if a failure to communicate arises for any reason, the confirmation number is "no answer".

Every transmission or attempted transmission is stored in a communication/order confirmation log, which is preferably indexed by company, and can be reviewed, viewed and printed by the clinic computer system operator.

Preferably, all transmissions can be automatically printed, every morning, for example at 6:00 a.m. This allows the physician or other staff to quickly review the orders or communications, determine if they were transmitted, and attempt an alternative communication, e.g., by facsimile, if any attempt to transmissions failed.

Upon the call to the product manufacturer, or insurance company, the communication engine also calls the system administrator to transmit the same information as was transmitted to the manufacturer or insurance provider. This transmission to the system administrator represents a billable event. On any pre-established cycle, for example monthly, an invoice from the system administrator can be sent either electronically or by conventional surface mail or facsimile, to the manufacturer, clinic, HMO or other entity linked to the system, for payment. Payment would preferably

be based on a flat fee per dispensing transaction, but it should be appreciated that other billing arrangements are possible.

The system administrator performs typical administrative functions such as updating the computer software with upgrades, but in a manner to
5 be described more fully below, the system administrator can also upload marketing materials, including advertising, to the clinic computer for background display to the operator.

As shown in Figure 3, the typical clinic computer system would include a central processing unit (CPU), data entry devices, preferably
10 including a keyboard, a computer "mouse", a bar code reader, and an image scanner. A magnetic card stripe reader may also be desirable. It should be appreciated that information can be digitally encoded for optical recognition (via bar code reader), or magnetically, for reading by a magnetic card stripe reader. Analogous encoding and reading techniques
15 may now be available or may be developed. Currently, optical encoding appears most convenient and the remaining description will refer primarily to optical encoding and bar code reading, but it should be understood that reference to "bar code" includes the magnetic stripe and other equivalents. An alternative term, used herein, is "automatic input device".

20 Output devices would include a monitor, whereby the operator can interactively see a visual display and confirm the accuracy of the entered data, as well as one or more printers. Preferably, one printer would be suitable for printing labels to be affixed to the product immediately before dispensing to a particular patient, and the other printer would be available
25 for printing either informational documents to be furnished to the patient about the product or the manner of taking the product, or alternatively, printing internal records about the content of the database associated with the system. The CPU is also connected via communications devices, typically a modem and telephone line to the organizations external to the
30 clinic.

As is well known in the field of computer technology, the computer system would typically have associated with the CPU, a large memory device(s), on which three types of digitized information are stored. The first is a so-called operating system program, which may be a combination of software and firmware, which controls the arithmetic and logic operations of the CPU and associated devices and peripherals. In the currently preferred embodiment of the invention, the operating system would be Microsoft Windows 95, available from Microsoft Corporation and the CPU would be any of a variety of so-called "IBM compatible" units that are adapted to operate thereunder. Secondly, a number of application modules are in digitally stored forms of computer programs adapted to perform the unique combination of functional features associated with the present invention. The programs could all be written in a common language, for example, "Visual Basic", also available from Microsoft or they could be written in different languages. The third type of stored information is the "input" or "calculated data", originating with the end user of the system.

It is believed that based on the functionality described in this specification and associated figures, one of ordinary skill in the art could, without undue experimentation, utilize Visual Basic or select another program having similar capabilities, to achieve the functionality set forth herein.

The application modules include:

- (1) communication engine;
- (2) product dispensing;
- (3) inventory control;
- (4) insurance processing.

Of course, the other computers associated with the overall system of the present invention, have applications modules that are activated when the computers communicate with each other. In particular, the system.

administration computer has a system administration program (e.g., also in Visual Basic), for achieving the functionality described herein.

The functionality of the communications engine was described above. Such communication is intimately associated with inventory control, insurance processing, and system administration. The communication engine is not a necessary adjunct to the product dispensing functionality. In this respect, it should be understood that the product dispensing functionality of the present invention is itself believed novel and patentable. This can best be summarized as a system and method whereby the physician's assistant can take a product from inventory, associate the product, doctor and patient automatically (e.g., via bar code reader), create and print out a product label automatically, then dispense the product with label over a transaction counter to the patient, while having created a computerized record of the transaction.

This core product dispensing aspect of the invention is preferably coupled to the inventory control functionality and the communication engine, whereby orders for replenishing inventory can be automatically created and communicated to the product supplier. In similar fashion, the system administration functionality is not essential to the product dispensing novelty, but in conjunction with the inventory control and associated communication engine, the system administration provides a novel way of monitoring and billing for each transaction by which a product is dispensed. Including communications with the insurance companies via the insurance processing module of the invention, represents the preferred embodiment.

The inventive features of the invention as summarized above can be advantageously coupled with additional functionality, such as report generation for tracking sales, etc.

With reference to Figure 4, further details of the preferred functionality of the invention will be described. Although the process of

Figure 4 represents a closed loop or cycle, a convenient first step is the receipt by the clinic of a shipment of products from a particular manufacturer. A given product may have a standard product identification bar code (i.e., according to ANSI standards, and example of which is shown in Figure 5). The input screens of Figures 6-9 are used by the operator to enter information when products are replenished or new kinds of products are added to inventory. If, for example, the product has a product number bar code (set by each clinic), that is entered in the "product number" field shown in Figure 6. If a professional in the clinic "compounds" his or her own product, a product number bar code can be automatically generated. The input screen of Figure 6 could be used when adding a new type of product to inventory, whereas the input screen of Figure 9 would be used when the replenishment products are received.

Alternatively, product information could be transmitted electronically from the manufacturers, or shipped on media such as floppy disc, such that all the input information in Figure 6 is automatically entered into the product file. Moreover, the variety of product records in the clinic's product file, could exceed the variety of products in inventory. The "extra" products represented in the product file, can, with the present invention, easily be ordered by the clinic in a manner similar to orders for ongoing products.

As also represented in Figure 4, HMO's can directly influence the dispensing of products, by means of "approved formularies". According to this feature, an HMO establishes a list of products which based on cost or other considerations, it prefers to be dispensed by physicians. The HMO can arrange for the delivery of a diskette containing these products, for entry into the product file. The HMO also identifies the conditions or other factors which identify these products as falling within the approved formularies. This information could be contained in a separate, formulary file. At the time the assistant is associating the doctor, patient and product, an indication can be made as to whether this product is within the approved

formulary. Because there is normally a dis-incentive for the doctor to prescribe a non-formulary product, the assistant and/or doctor can then decide whether to complete the transaction for the originally prescribed product, or to substitute an approved product of the formulary.

5 Figure 7 shows an input screen by which the clinic assigns normal usage instructions (e.g., dosage and frequency) uniquely for each of at least the products entered in the product file that are in physical inventory. These instructions will eventually be printed out on labels to be affixed to the respective product when dispensed. Figure 8 shows an input screen
10 for the clinic to create files which contain information to be associated with a product, but which do not necessarily have a unique one-to-one relationship with a particular product. For example, a list of up to ten file names of scanned instructions can be associated with a particular product. Each of the ten files would be a page of instructions or other information.
15 This information could be initially scanned into the system via the scanner shown in Figure 3. This feature saves considerable memory, by avoiding storage of multiple document images for each product.

 At the time a particular patient visits the clinic, a determination is made as to whether this is a new or existing patient. In one embodiment,
20 the patient record screen as represented in Figure 10B is selected starting from the "Patient" field of the main menu. If no information on the patient is in the record, the display screen of Figure 10A is called and new patient information may be added alpha-numerically by the operator via the keyboard. In a preferred embodiment, a database of residences listed in
25 the phone book within e.g., a 100 mile radius of the clinic is available, such that by entering merely the telephone number field shown in Figure 10B, the patient can be confirmed as a new or current patient. If the patient is new, most if not all of the other information needed per Figure 10A, can be transferred from the telephone directory database; otherwise manual entry.
30 via keyboard can be made. If the patient already exists in the database, the

product dispensing screen (to be described below) automatically appears. Other regional databases may also be utilized for this purpose. If needed a screen as depicted in Figure 11 can be called up to show a patient's prescription history.

5 Figure 12 depicts the dispensing screen, by which the doctor, patient, product, and instructions are linked together to create an output document to be dispensed with the product to the patient. In particular, one output document is the product label to be affixed to the product, with an optional document being separate, supplemental instructions to
10 accompany the product. When highly regulated products are to be dispensed, the identity of the assistant who hands the product to the patient ("dispenser") would also be printed on the label. It should be understood that the professional could also be the dispenser, in the absence of an assistant.

15 Preferably, much of the information to be entered in the fields of the dispensing screen would be scanned, e.g., via the bar code reader, thereby minimizing the time necessary for the physician's assistant to prepare the papers and create the records associated with a particular dispensing transaction. Scanning this information can be facilitated by the use of a
20 "template" comprising a configured group of bar codes, a representative example of which is shown in Figure 13. For example, all the left-hand pages of a template book would be identical, in carrying the same set of bar codes for all physicians in the clinic whereas the sequence of right-hand pages would have consecutive product bar codes. In this manner, once the
25 physician's assistant turns to the particular right-hand page which lists the desired product, the bar codes for physicians, dispensers, and preferably, certain confirmatory inputs such as whether the instructions as displayed are correct, and/or complete, are all visible and accessible to the bar code reading device, as if on one large "page". Other templates could have
30 options described in connection with the other fields in Figure 12, especially

the patient entry. The assistant is required to make an entry for each of the fields, or at least confirm that no entry is to be made, whereupon the system creates at least one printed record (i.e., the product label and/or other instructions). The label is affixed to the product and it is handed over to the patient. Figure 14 shows an example of such printed label.

The template shown in Figure 13, or variations thereof, can also be used as a so-called "prescription pad". The physician names and product names are paired with adjacent respective coded versions of this information. Each such template is in the form of a disposable sheet. The physicians are provided with pads of such sheets, such that during the patient consultation, the physician can place a mark next to the physician's name, and a mark next to the one or more names of products prescribed for and therefore to be dispensed to the patient. The patient or physician can, after completion of the consultation, hand the sheet as marked to another staff member, who uses the sheet in the same manner as described above, to associate the physician and the products from the sheet, with patient information, according to which the dispensing label is generated. Alternatively, the physician with permanent or sheet templates, can be electronically connected to the clinic computer or transaction counter, for transmitting the "prescription" electronically rather than manually. The "marking" in this case would be performed by placing a code reading device at the coded pattern adjacent the name of the selected product.

An alternative form of patient "template" is the patient's physical chart or file folder, to which has been affixed a patient bar code strip. At the time the patient file is created, a patient bar code is also created. The assistant can at that time request the clinic computer to print out a patient bar code label, which is then secured to the patient's chart. The chart follows the patient during the entire visit to the clinic, and therefore is readily available to the assistant at the time the assistant uses the computer to associate the doctor, patient and product. This would typically be much

quicker than having the assistant leaf through many pages of patient bar codes maintained, for example, in alphabetical order. The overall electronic association of the physician name, patient name, and prescribed products is most efficiently achieved, by the combined use of the
5 "prescription pad" as described above, with the patient identification information encoded on the patient's physical chart of file, which would be available to both the physician in the consultation area and the assistant at the dispensing area of the clinic.

All sales, clinic product tracking, and product dispensing is
10 performed on the same dispensing screen. While everything can be manually entered, data can be entered in all fields via bar code for maximum speed and accuracy.

The fields of Figure 12 are more particularly described below:

Patient - The patient name can be acquired by typing their name or
15 assigned patient number, selecting from an alphabetical listing, swiping their driver's license, swiping a credit card, entering their telephone number, or from scanning their bar code. A patient's bar code would appear as %FM1234 where % cues the bar code to the computer. F is the first letter of the patient's first name, M is the first letter of the patient's
20 middle name and 1234 are the last four digits of their phone number. This formula was designed because a patients' name might be too long to be printed on a conventional bar code printer.

Doctor - The physician name is entered or scanned (the name can be bar coded in its entirety). If there is only one doctor, his or her name is
25 automatically added to this field and the cursor advances to the next field. This associates the product, whether dispensed or used in the clinic, to the responsible individual.

Dispenser - The actual individual who is operating the computer can enter or scan their initials or swipe a mag stripe card.

Product - The product can be acquired by typing the product number, scanning the word "Products" and selecting from an alphabetical listing, or scanning the product bar code. If a product is not bar coded or a doctor is "compounding" a product, he can generate a bar code. The product bar code would appear as %P1234 where % cues the bar code to the computer. P is the first letter of the product name, and 1234 is the product number. This was designed to produce the smallest possible bar code footprint.

Lot Number - If required for tracking, the product lot number can be acquired by entering with the keyboard or scanning. Selecting "Y" (for yes) in the "Lot#" inventory record field (Fig. 6) will require the entry of this field when dispensing. The lot number bar code would appear as %\$12345 where % cues the software, \$ indicates a lot number, and 12345 is the actual lot number.

Expiry Date - If required for tracking, the expiry date can be acquired by entering with the keyboard or scanning. Selecting "Y" (for yes) in the "Exp. Date" inventory record field (Fig.6) will require the entry of this field when dispensing. The expiry date bar code appears as %/99125 where % queues the bar code, / indicates an expiry date, and 99125 represents the Julian date.

Price Charge - After the product is selected, the price, sales tax, if applicable, amount and running total are displayed on the bottom of the screen. If the product is to be discounted or given for free, the price can be adjusted before continuing by entering PC via keyboard or scanning.

Are Instructions Correct? - Upon entry of "No", the cursor automatically goes to the instruction area for modification. Upon entry of "Yes", it displays the product, price, tax status, amount, and total on the bottom and a prescription label (Fig. 14) if required, is printed. "Yes" also advances the cursor to the product field for selection of another product.

Dispensing Complete - When all products have been entered, scanning or entering "Complete" will update the patient record, update the inventory, update the sales tax records, and print a receipt for the patient.

Figure 15 shows the screen by which the operator can enter new
5 companies, or update information about companies, which supply products to the clinic. The information in this record is utilized to automatically reorder inventory. At the displayed time of day, the program automatically assembles all orders for transmission to the appropriate companies. Order assembly will normally occur before the first transmission of each day. The
10 assembly time should be entered in military time. The automatic assembly operates with respect to companies which have an "order day", and is keyed to that company's products which have fewer units in inventory than the specified reorder level (see Figure 6). The automatic reordering is communicated to the respective companies, and the companies arrange for
15 the products to be delivered to the clinic, whereupon the cycle of steps set forth in Figure 4 is repeated.

Figure 16 illustrates a suitable menu for initiating a communication to a company, other than the automatic order placement.

It should be appreciated that many manufacturers maintain close
20 personal relationships with the clinics, through the use of sales representatives who visit the clinics on a regular basis. These representatives could be provided with access authorization, for example a magnetic card with proper coding, by which such representative can access the computer system in the doctor's clinic during visits. Such
25 access would, however, be controlled by the computer program, to permit inspection, addition, deletion, or modification of only that data which directly involves the products supplied to the clinic by that manufacturer. With this capability, the representative could physically replenish inventory and make the appropriate computer entries, without direct involvement of the

physician or physician's assistant. In other words, the assistant or the representative can perform the first three steps set forth in Figure 4.

As described above, the assistant in the clinic, based on the physician's diagnosis and prescription, would perform the fourth through eighth steps in Figure 4, while interacting with the computer system and the patient. The ninth step of dispensing of the product, completes the assistant's direct activity in the cycle. Thereafter, the computer system automatically at the appropriate moment, assembles and places the orders to the manufacturers, and communicates with the insurance companies and the system administrator.

Communication with the system administrator can also include the uploading of product marketing information, in a form which is continually visible at the clinic's monitor. For example, as shown in Figure 17, a so-called "screen saver" substantially fills the monitor screen when no data entry is to be made into the computer system. Such screen saver could be uploaded periodically from the system administrator; for example, a particular screen saver appears for a one week period. It could also be interactive, for example by including questions which the personnel at the clinic could be asked to answer, with some incentive associated with a correct answer, thereby encouraging regular and careful scrutiny of the marketing information presented in the screen saver. For example, it would be a relatively straightforward programming task, to include with the next transaction information sent by the clinic computer to the system administrator computer, an additional item of information constituting the clinic's "response" to an incentive question displayed on the screen saver.

When the operator hits a particular key, the screen saver disappears or otherwise recedes, such that the main menu (Figure 18) appears. The main operator can then select the appropriate record screen e.g., Figures 6-12, 15 or 16, or other associated screens which one of ordinary skill in

the art could readily include in the course of implementing a commercial embodiment of the invention.

It should be appreciated that the particular display formats and fields illustrate the preferred embodiment and that all displays and fields are not necessarily required to implement each embodiment of the invention.

APPENDIX

The following appendix provides the field definitions for the computer system display screens shown in Figures 6, 7, 8, 9, 10A, 10B, 11, 12, 15, 16.

+++

FIGURE 6 - Add, Change or Delete Inventory

From the Main Menu Fig. 18, select Inventory, then select Add, Change or Delete Inventory. Inventoried items can be displayed in the Group File Selection box in Product Name Sequence, Product Description Sequence, or Category Sequence by selecting the appropriate button at the top of the screen.

Field Definitions

Pharmaceutical Category	This defines the type or category of product. When adding a new product, use the up and down arrows on the right to find the appropriate category. Select the category by clicking it with the mouse.
Product Name	Self Evident.
Description 1	Product description.
Description 2	Additional field for the product description.
Strength	Product Strength.
Size	Product Size.

	NDC Number	If the product is a prescription pharmaceutical, the NDC number should be entered.
	Cost	This is the clinic's cost for the product. The default value is \$0.00 for tracking samples given to patients.
5	Pharmaceutical Company	This is the product manufacturer or distributor. When adding a new product, use the up and down arrows on the right to find the appropriate company. Select the company by clicking it with the mouse.
10	Sell	This is the clinic's sale price for the product. The default value is \$0.00 for products that are used in the office.
	On Hand	This is the current inventory level. When adding a new product, entering 0 will give you the option of ordering the product immediately.
15	Re-Order	When your inventory level falls below this number, it will automatically re-order.
	Product Number	This is the UPC number, bar code number, or the clinic's assigned product number.
20	Lot Number	Y indicates that a Lot # should be captured when dispensing. N will cause the software to skip Lot # field when dispensing.
	Expiry Date	Y indicates that an Expiry Date should be captured when dispensing. N will cause the software to skip the Expiry Date when dispensing.
25	Charge Sales Tax	Y indicates that Sales Tax should be collected on this product. N indicates it is not taxable. The sales tax rate can be entered in the main menu (Fig.18) under "system". The Sales Tax Reports can be found in the main menu (Fig.18) under "Reports".
30	Office Product	Y indicates the product is used in the office. When the product is "dispensed", the prescription labels and instructions will not print. N indicates the product is for sale to patients.

Sample Product Y indicates a product that is given to the patient as a sample. N indicates all other products.

Find a Product

5 **Find Button** Select the Find button. Enter the product name, and select the OK button.

Group File Selection Box Using the scroll bar on the right side of the Group File Selection Box, locate and select the appropriate product. When highlighted, the product information will be displayed.

10 **Add, Change, Or Delete A Product Record**

Add Select the Add button and enter the information for each field.

15 Select the company and drug category by highlighting the appropriate information. All other fields are keyed in.

If you should decide not to finish adding the product, select the Cancel Add button.

When finished, select the Update button.

20 **Change** Find the product record, highlight the appropriate field, enter the correct information, and select the Update button. You will be asked to confirm your changes.

25 **Delete** Find the appropriate product record, and select the Delete button. You will be asked to confirm the removal before the record is removed.

30 **Instructions** Select the Instructions buttons to add or change the prescription instructions. Enter or change the instructions. When finished, select the Done button. You will be asked to confirm the finished instructions.

+++

FIGURE 7 - Instructions for Inventory Item

This application allows you to enter and save up to 80 characters of instructions for the selected product.

+++

5 FIGURE 8 - Scanned Instruction Files

Select this screen to add or change the scanned instructions. Enter up to ten pages of instructions, in the order they should print. The file format should be ????.bmp. When finished, select the Done button.

+++

10 FIGURE 9 - Incoming Pharmaceuticals

From the main menu, (Fig.18) select "Inventory", and then "Incoming Pharmaceuticals". This application is for entering the products, when they are received. It also gives providers an opportunity to print bar codes for products that are not yet bar coded. Select the product by using the Find button or the Group File Selection box. Upon selection, the current inventory on hand will be displayed.

Find Button Select the Find button. Enter the product name, and select the OK button. The record will appear on the Group File Selection box, and the current inventory will be displayed.

Group File Using the scroll bar on the right side of the Group File Selection Box, locate and select the appropriate product. When highlighted, the current inventory will be displayed.

25 With the cursor in the + Incoming Inventory field, enter the number of units received, and touch the Tab key. The new inventory level will be displayed in the New On Hand Inventory field. Selecting the Update button will complete the task.

30 **Print Product Bar Code** This button prints a bar code for any product that - - needs one.

30

If selected, Enter the Number of Labels needed.

If the product record so indicates, Enter the Expiry date and select the Ok button.

5

If the product record so indicates, Enter the Lot # and select the Ok button.

+++

FIGURE 10A - Patient File Maintenance

From the main menu (Fig.18), select Patient.

Field Definitions

10	Patient First Name	This field is limited to 10 characters.
	Patient Middle Initial	This field is limited to 1 character.
	Patient Last Name	This field is limited to 20 characters.
	Address 1	Self-Evident.
15	Address 2	Optional Field.
	City	Self-Evident.
	State	This field is limited to two characters.
	Zip	This field supports a 5 digit or 9 digit zip code.
	Telephone	Enter the 10 digit area code and phone number.
20	Social Security # or Account #	Enter the patient's social security number or account number.
	Follow-Up Date	If entered, the patient will appear on the Follow-Up Report at the appropriate time. Enter the date as MMDDYYYY (no dashes or slashes).

Finding A Patient Record

- | | | |
|----|---------------------------------|--|
| 5 | Find Button | Select the Find button. Enter the patient's last name, comma, space, and first name. Select the OK button. If the patient is in the system, their record will appear. |
| 10 | Wild Card Find | After selecting the Find button, enter the first letters of the patient's last name, followed by *. When you select the OK button, it will immediately jump to that section of patient records. Use the Next and Previous buttons to locate the correct patient. |
| 15 | Group File Selection Box | Using the scroll bar on the right side of the Group File Selection Box, locate and select the appropriate patient. When highlighted, the patient's information will be displayed. |
| | Notes | When entering or updating patient information, notes can be made for future reference, regarding significant patient characteristics such as drug allergies, drug interactions, etc. |

+++

20 **FIGURE 10B - Find Patient for Dispensing**

To find a patient or department, there are a number of options.

- | | |
|----|--|
| 25 | 1. Enter the patient's name. |
| | 2. Enter the patient's phone number including the area code. |
| | 3. Swipe the patient's credit card and enter the last four digits of their phone number. |
| | 4. Scan the patient's or department bar code. |
| | 5. Select find button. |
| | 6. Enter the patient's account number. |

- | | | |
|----|--------------------------|--|
| 30 | Patient Selection | If you have previously dispensed to the patient, their name will appear in the Patient Data Base. If not, the computer will scan the Phone Book Data Base for a match. |
|----|--------------------------|--|

Using the up and down arrow keys on the right of each data base, find the appropriate patient and double click on their name. You will immediately go to the dispensing screen.

- | | | |
|----|---|--|
| 5 | Add a Spouse
or Child Button | If an individual with the correct address and phone number is displayed in either data base, but the name needs modifying, highlight the name and select the Add A Spouse or Child button. Enter the last name, enter a comma and space, enter the first name and a space, and enter their middle initial (if any). The name is added to the Patient Data Base and you will immediately go to the dispensing screen. |
| 10 | | |
| 15 | Display All
Patients Button | If you would like an alphabetical listing of all patients select the Display All Patients button and they will appear in the Patient Data Base. Again, select the appropriate patient and double click on their name. |
| 20 | Add A New
Patient Button | If the patient is not found in either data base, selecting this button will take you to the Patient file Maintenance screen. After adding the patient information, you will immediately go to the dispensing screen. |

+++

25 **FIGURE 11 - Search Prescription History**

After finding the appropriate patient in the "Patient file Maintenance" screen (Fig.10A), select the Search Prescription History button. All prescriptions are displayed in descending data order with the most recent displayed first.

- | | | |
|----|--|---|
| 30 | Reverse
Prescription
Button | Find the prescription that you would like to reverse. Select the Reverse Prescription button and confirm that you want to reverse the prescription. Enter your initials and select the OK |
|----|--|---|

button. The patient record is changed and the inventory is increased.

+++

FIGURE 12 - Dispensing

- 5 The product, price, sales tax amount, and running total is displayed on the bottom of the screen. Use the First, Next, Previous, and Last buttons to view each item dispensed.

	Doctor	Scan or Enter the Physician's Name. If there is only one physician, their name will automatically display.
10	Dispenser	Scan or Enter the Dispenser's Initials or Number.
	Patient	The patent information and patient notes will automatically display.
	Product #	Scan or Enter the Product Number. The product name and description will immediately display.
15		PRODUCTS - By scanning or entering the word PRODUCTS , you can select the product with a Group File Selection Box.
20		COMPLETE - After each product is dispensed, the cursor returns to the "Product" field for another product selection. By scanning or entering the word COMPLETE , you indicate that you have finished dispensing to this patient. A receipt will print, if selected, and the cursor will return to the "Find Patient" screen (Fig.10B), waiting for the next patient.
25		
	Lot #	Scan or Enter the Product Lot Number. Enter the Lot # exactly as it appears on the product. If the inventory record indicates that no lot number is required, the field will be skipped.
30	Expiry Date	Scan or Enter the Expiry Date. Enter the expiration date as MM/DD/YYYY. If the inventory record indicates that no expiration date is required, the field will be skipped.

	FU Date	Scan or Enter the Follow-Up Date. The follow-up date is entered or scanned as:														
5		<table><tr><td>30 DAYS</td><td>7 MONTHS</td></tr><tr><td>60 DAYS</td><td>8 MONTHS</td></tr><tr><td>90 DAYS</td><td>9 MONTHS</td></tr><tr><td>120 DAYS</td><td>10 MONTHS</td></tr><tr><td>150 DAYS</td><td>11 MONTHS</td></tr><tr><td>180 DAYS</td><td>12 MONTHS</td></tr><tr><td>NONE</td><td></td></tr></table>	30 DAYS	7 MONTHS	60 DAYS	8 MONTHS	90 DAYS	9 MONTHS	120 DAYS	10 MONTHS	150 DAYS	11 MONTHS	180 DAYS	12 MONTHS	NONE	
30 DAYS	7 MONTHS															
60 DAYS	8 MONTHS															
90 DAYS	9 MONTHS															
120 DAYS	10 MONTHS															
150 DAYS	11 MONTHS															
180 DAYS	12 MONTHS															
NONE																
10		If configured on the main menu (Fig.18) under "System" to not use a follow-up date, the field will be skipped.														
15	Are The Instructions Correct	Scan or Enter <u>NO</u> , if the instructions require modification. The cursor will advance to the displayed instructions. Make the appropriate changes and then touch the Enter key. The cursor will return to the "Instruction Correct?" field.														
20		Scan or Enter <u>YES</u> , if the instructions are correct. The cursor will return to the Product Selection field, allowing you to dispense another product to this patient. The scanned images and prescription labels will immediately begin printing.														
25		Note: If the product record (Fig.6) indicates "Y" in the Office Product field, it will <u>not</u> print the scanned image or prescription labels.														
30		Scan or Enter PC - By scanning or entering the word PC (Price Change), you have the ability to change the product price. After entering the new price, the cursor will return to either the "Instructions Correct?" field or the "Product".														

FIGURE 15 - Companies

From the main menu (Fig.18) select "Inventory", and then "Companies".

This allows you to add, change, or delete manufacturers and distributors. It also determines if and when the orders are transmitted.

Field Definitions

5	Company Name	This is the name of the company that supplies the product. If it is purchased from a distributor, enter the distributor's phone number in the Order Line (Modem #) field. The order will be transmitted with enough information for the distributor to identify both you and the product.
	Company Address	Self-Evident.
	Company Address	Self-Evident.
10	City	Self-Evident.
	State	Two characters only.
	Telephone	Self-Evident
	Zip Code	5 or 9 digits.
15	Order Line (Modem)	This is the product supplier's modem number. All orders for this company will be automatically transmitted to this number.
		If the orders for this company are transmitted to a distributor, the distributor's number should be entered.
20	Order Time	HH - When adding a new company, using the up and down arrow button, select the hour of order transmission.
25		MM - When adding a new company, using the up and down arrow button, select the minute of the order transmission.
		AM or PM - When adding a new company, enter the appropriate time of day for the order transmission.
	Last Ordered	This field displays the last order transmission date.
30	Fax	This if the fax number of the company receiving the order transmission, not the fax number of the manufacturer. Because the number is printed on the

top of every order, any failed transmission can be quickly faxed to the appropriate company.

- 5 **Are Orders Transmitted To Sponsor?** When adding a new company, enter Y for yes or N for no.

Add, Change, or Delete A Company

- Add** Select the Add button and enter the appropriate information.
- 10 **Change** Find the company record, highlight the appropriate field, enter the correct information, and select the Update button.
- Delete** Find the appropriate company record, and select the Delete button. You will be asked to confirm the removal.
- 15 **+++**

FIGURE 16 - Communications

- 20 By selecting "Communications" from the main menu (Fig.18), you can send a message and receive confirmation that the company received it. Upon selecting "Communications", you are asked to Enter Your Name, then select the OK button. Select a Company to receive your message. The following screen will appear: Select one, two, three or all four buttons. Only the fourth button, "Comments, Questions, or Messages", allows you to enter a detailed message. When finished, select the Transmit button.

CLAIMS:

1. A system for dispensing a wellness product by a staff member of a clinic when a particular one of a plurality of clinic patients consults with a particular one of a plurality of wellness staff professionals at the clinic, comprising:
- 5 a physical inventory of a variety of wellness products, located at the clinic;
- a transaction counter at the clinic, where one of said products is dispensed by one of said staff members, for said one patient after removal
- 10 of the product from said inventory;
- a computer system at the clinic, including,
- a central processing unit (CPU),
- a display device,
- at least one of a keyboard and mouse manual input device,
- 15 at least one of a bar code and magnetic strip reader auto input device,
- a digital memory in which are digitally stored,
- an operating system program,
- an applications program, and
- 20 data files;
- wherein said data files include,
- a patient file containing a plurality of digitized patient bar or magnetic codes, each unique to one of a respective plurality of individual patients including said patient,
- 25 a product file containing digitized information about each of said variety of products, including product name, supplier of the product to the clinic, characteristic affecting wellness, and a plurality of product bar or magnetic codes, each unique to one product name;

an auto input template configuration including a first portion containing a bar or magnetic code unique to each professional at the clinic, a second portion containing the patient bar or magnetic codes, and a third portion containing the product bar or magnetic codes;

5 wherein said application program embodies statements and instructions,

 for said staff member to electronically associate in said computer system using said auto input device and said template configuration, one professional with one patient and one product with said one patient, and

 for said computer system to generate, from said associations, a dispensing record containing said patient's name, said professional's name, said associated product name, and said characteristic of said product.

15 2. The system of claim 1, wherein the bar or magnetic codes portion for each patient are in the form of a bar or magnetic code label affixed to each patient's physical case file folder.

 3. The system of claim 1, wherein at least one of said portions of said auto input template configuration is physically distinct from the other

20 portions.

 4. The system of claim 3, wherein the physically distinct portion is said second portion.

 5. A system for dispensing a wellness product by a staff member of a clinic when a particular one of a plurality of clinic patients consults with

25 a particular one of a plurality of wellness staff professionals at the clinic, comprising:

a physical inventory of a variety of wellness products, located at the clinic;

a transaction counter at the clinic, where one of said products is dispensed by one of said staff member, to said one patient after removal of the product from said inventory;

a computer system at the clinic, including,
a central processing unit (CPU),
a display device,
at least one of a keyboard and mouse manual input device,
at least one of a bar code and magnetic strip reader auto input device,

a digital memory in which are digitally stored,
an operating system program,
an applications program, and
data files, and
a printer;

wherein said data files include,
a patient file containing a plurality of digitized patient bar or magnetic codes, each unique to one of a respective plurality of individual patients including said patient, and information about the respective patients including name and address, and

a product file containing digitized information about each of said variety of products, including product name, supplier of the product to the clinic, characteristic affecting wellness, and a plurality of product bar or magnetic codes, each unique to one product name;

an auto input template configuration including a first portion containing a bar or magnetic code unique to each professional at the clinic, a second portion containing the patient bar or magnetic codes, and a third portion containing the product bar or magnetic codes;

wherein said application program embodies statements and instructions,

for said staff member to electronically associate in said computer system using said auto input device and said template configuration, one professional with one patient and one product with said one patient, and

for said computer system to generate, from said associations, a dispensing label with said printer, containing said patient's name, said professional's name, said associated product name, said characteristic of said product, and said instructions for use;

whereby said label can be affixed to said product before said product is dispensed to said patient at the transaction counter.

6. The system of claim 5, wherein the bar or magnetic codes portion for each patient are in the form of a bar or magnetic code label affixed to each patient's physical case file folder.

7. The system of claim 5, wherein at least one of said portions of said auto input template configuration is physically distinct from the other portions.

8. The system of claim 7, wherein the physically distinct portion is said second portion.

9. A system for dispensing wellness products by staff members at a clinic where a patient consults with a wellness professional, comprising:

a physical inventory of a variety of wellness products, at least some of which carry a bar code product identification number;

a transaction counter where one of said products is dispensed to a patient after removal from said inventory;

a clinic computer system including,

a central processing unit (CPU),

5 a display device,

at least one of a keyboard and mouse manual input device,

at least one of a bar code reader or magnetic strip auto input device,

a digital memory in which are digitally stored,

10 an operating system program,

an applications program, and

data files, and

a printer;

wherein said data files include,

15 a patient file containing information about the respective patients including name and address,

a product file containing information about each of said variety of products, including product name, supplier of the product to the clinic, active characteristic affecting wellness, instructions for use, and digitized product bar codes corresponding to each of said product identification numbers, and

20 a plurality of document image files, each containing a digital image of a supplementary instruction page which is applicable to the use of more than one product;

25 wherein said application program embodies statements and instructions,

for generating a dispensing data entry screen display at said display device, having a plurality of fields for prompting a staff member to enter data using at least one of said manual and said auto input devices,

30 said data including the name of the professional, the name of the patient,

the name of the product to be dispensed to the patient, and the file name of one of said document image files, and

5 for said computer system to generate from said data entered in said fields, a dispensing label with said printer, containing said patient's name, said professional's name, said associated product name, active characteristic of said product, and instructions for use, and a document distinct from said label, constituting said supplementary instruction page.

10 10. A method for dispensing wellness products from a clinic where a patient consults with a wellness professional, said clinic having, a physical inventory of a variety of wellness products, at least some of which carry a bar code product identification number;

a transaction counter where one of said products is dispensed to a patient after removal from said inventory;

15 a clinic computer system including, a central processing unit (CPU), a display device, at least one data input device, a digital memory device in which are digitally stored, an operating system program, 20 an applications program, and data files, and

a printer;

wherein the method comprises the steps of:

25 receiving a shipment of products at the clinic, from a supplier; entering product information in a product file in said digital memory, whereby for each bar coded product in inventory, the product file includes a digitized bar code product identification number, product name, product strength, desired reorder quantity, inventory threshold below which product is to be reordered, and normal dosage;

entering patient information in a patient file in said digital memory, including name and patient bar code number;

providing a wellness consultation to the patient at the clinic, including the identification of a wellness product for the patient;

5 by means of the clinic computer system, associating a wellness professional's name with the name of the patient and with the wellness product identified by said professional for the patient;

from said association, printing out a label including the name of the professional, the name of the patient, the name of the identified product, and the dosage;

before the patient leaves the clinic, directing the patient to the transaction counter, where said product with label is handed to the patient;

with the clinic computer system, accumulating information associated with each dispensing of a product to a patient, and comparing said accumulated information with the record for each product in the product file;

from said comparison, automatically preparing with said clinic computer system, an electronic product reorder request if the number of units of said product falls below the reorder threshold;

electronically linking the clinic computer system with a computer system at the supplier of the product in inventory; and

transmitting an electronic communication including said reorder request to the computer at the supplier of the product to be reordered.

11. The method of claim 10, including:

electronically linking the clinic computer system with a computer at a central administrator remote from the clinic, and

transmitting an electronic communication including said reorder request, to the computer at the central administrator.

12. The method of claim 11, including transmitting an electronic communication to the central system administrator and to the supplier, indicative of the occurrence of each dispensing of a product of said supplier.

5 13. The method of claim 10, including said computer system at the control system administrator or supplier transmitting an electronic message concerning wellness products available from said supplier to the clinic computer system for display on said display device.

10 14. The method of claim 10, including:
electronically linking the clinic computer system with a computer at a central administrator remote from the clinic, and
said computer at the central administrator transmitting an electronic message concerning wellness products available from particular suppliers, to the clinic computer system for display on said display device.

15 15. The method of claim 11, including said computer at the central administrator transmitting an electronic message to at least one of the clinic computer system or the supplier computer concerning fees payable to the central administrator commensurate with the number of products reordered by the clinic from the supplier.

20 16. The method of claim 10, wherein a multiplicity of patients visit the clinic, some of said patients having insurance coverage from a coverage provider such that each of a plurality of patients of the clinic has coverage from one of a plurality of providers, and at least some of said providers have a respective provider computer system, and wherein:

25 the step of entering the patient information includes entering the name of a coverage provider, and

said electronic communication for reordering a product, includes information on the quantity of said units which were dispensed to patients who do not have said coverage, and on the quantity of said units that were dispensed under coverage for each of the coverage providers.

5 17. A method for dispensing a wellness product from a products inventory in a clinic where a patient visits to consult with a particular wellness professional in a consultation area of the clinic and then receives a particular wellness product selected by said professional, comprising:

10 providing said professional with a tangible prescription template containing a plurality of names of wellness products, each name having adjacent thereto, a unique pattern of coded information;

 in the consultation area, manually selecting from the template, a particular product to be dispensed for the patient, by marking one of said product names;

15 electronically reading the unique pattern of coded information adjacent said marked product name and electronically associating the name of said professional, the name of the patient, and the name of the product identified by said marking;

20 from said electronic association, generating a record containing the name of said professional, the name of the patient, and the name of the product identified by said marking, and

 dispensing the selected product for the patient.

25 18. The method of claim 17, wherein said marking is performed by reading the product names, recognizing the name of the product to be selected, and placing a coded information reading device at the unique pattern of coded information adjacent said selected name.

19. The method of claim 18, wherein said template includes a plurality of names of professionals in the clinic, each name of a professional having adjacent thereto, a unique pattern of coded information, and wherein the method includes:

- 5 manually designating said particular professional by a second marking at one of the names of the professionals, and
electronically reading the unique pattern of coded information adjacent said second marking, and
the step of electronically associating is responsive to the step of
10 electronically reading said pattern adjacent said second marking.

20. The method of claim 17, wherein the clinic includes a computer system having a data file in which each product is related to one of a plurality of product suppliers and a communications module for electronically communicating with each of said product suppliers, and
15 wherein:

- responsive to said electronic association, the computer system stores a value commensurate with the number of said particular products which have been dispensed by the clinic, and
at preselected intervals, the communications module electronically
20 transmits to the supplier of said particular product, data commensurate with the accumulated number of said products which have been dispensed.

21. The method of claim 17, wherein the clinic has a computer system including a data file of patients of the clinic, and a records system wherein a patient folder includes a pattern of coded patient identifying
25 information that is unique to each patient, and wherein,
during the consultation, the folder for said patient is brought to the dispensing area, and

said step of electronically associating is preceded by the computer system electronically reading the pattern of coded patient information.

22. The method of claim 21, wherein said template includes a plurality of names of professionals in the clinic, each name of a professional
5 having adjacent thereto, a unique pattern of coded information, and wherein the method includes:

manually designating said particular professional by a second marking at one of the names of the professionals,

electronically reading the unique pattern of coded information
10 adjacent said second marking; and

the step of electronically associating is responsive to the step of electronically reading said pattern adjacent said second marking.

23. The method of claim 22, wherein the computer system has a data file in which each product is related to one of a plurality of product
15 suppliers and a communications module for electronically communicating with each of said product suppliers, and wherein:

responsive to said electronic association, the computer system stores a value commensurate with the number of said particular products which have been dispensed by the clinic, and

20 at preselected intervals, the communications module electronically transmits to the supplier of said particular product, data commensurate with the accumulated number of said products which have been dispensed.

24. A method for dispensing a wellness product from a products inventory in a clinic where a patient visits to consult with a particular
25 wellness professional in a consultation area of the clinic and then receives a particular wellness product selected by said professional, comprising:

providing said professional with a tangible prescription template containing a plurality of names of wellness products, each name having adjacent thereto, a unique pattern of coded information;

5 in the consultation area, manually selecting from the template, a particular product to be dispensed for the patient, by marking one of said product names;

in the dispensing area;

electronically reading the unique pattern of coded information adjacent said marked product name and electronically associating the
10 name of said professional, the name of the patient, and the name of the product identified by said mark,

from said electronic association, generating a record containing the name of said professional, the name of the patient, and the name of the product identified by said mark, and

15 dispensing the selected product for the patient.

25. The method of claim 24, wherein said template includes a plurality of names of professionals in the clinic, each name of a professional having adjacent thereto, a unique pattern of coded information, and wherein the method includes:

20 manually designating said particular professional by a second marking at one of the names of the professional, and

electronically reading the unique pattern of coded information adjacent said second mark, and

25 the step of electronically associating is responsive to the step of electronically reading said pattern adjacent said second mark.

26. The method of claim 25, wherein the clinic includes a computer system having a data file in which each product is related to one of a plurality of product suppliers and a communications module for

electronically communicating with each of said product suppliers, and wherein:

responsive to said electronic association, the computer system stores a value commensurate with the number of said particular products which have been dispensed by the clinic, and

at preselected intervals, the communications module electronically transmits to the supplier of said particular product, data commensurate with the accumulated number of said products which have been dispensed.

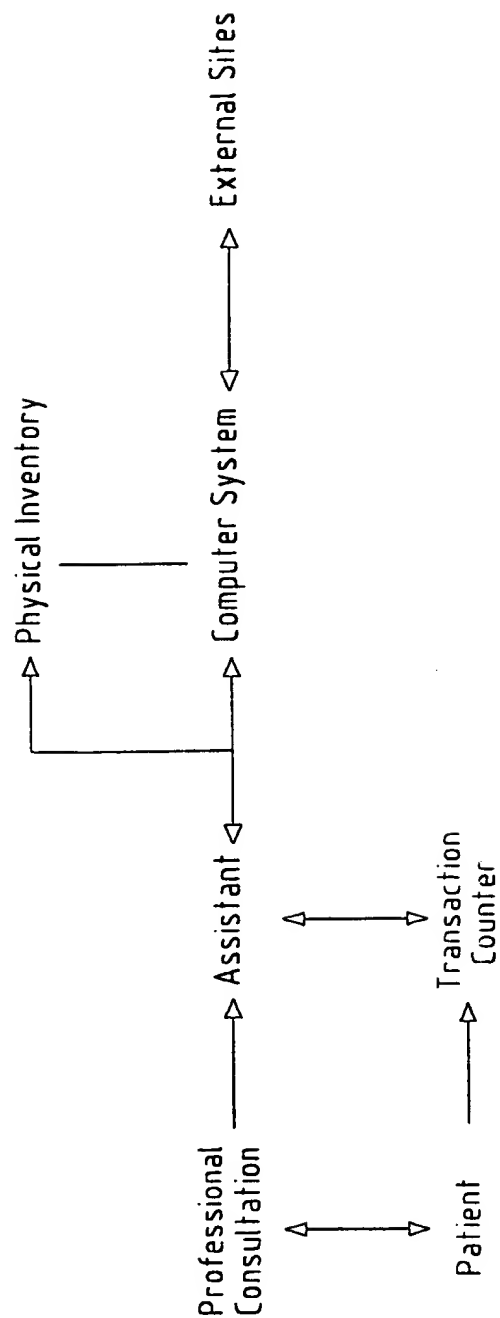


Figure 1

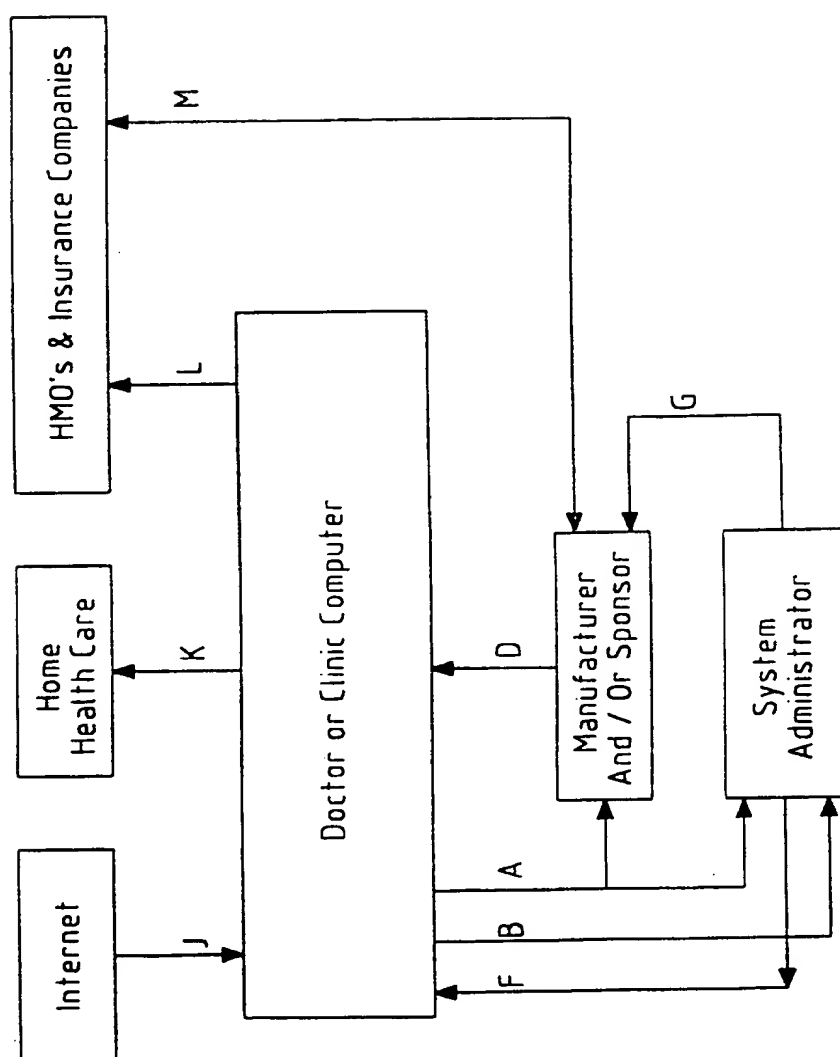


Figure 2

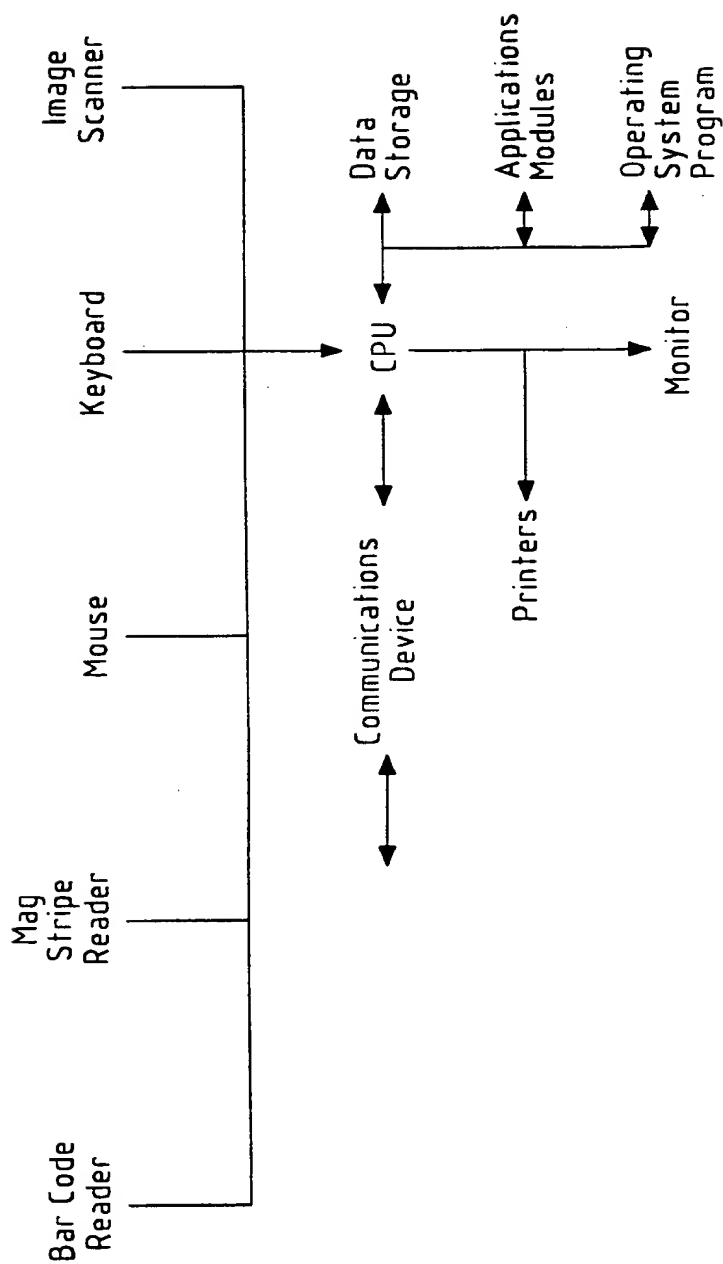


Figure 3

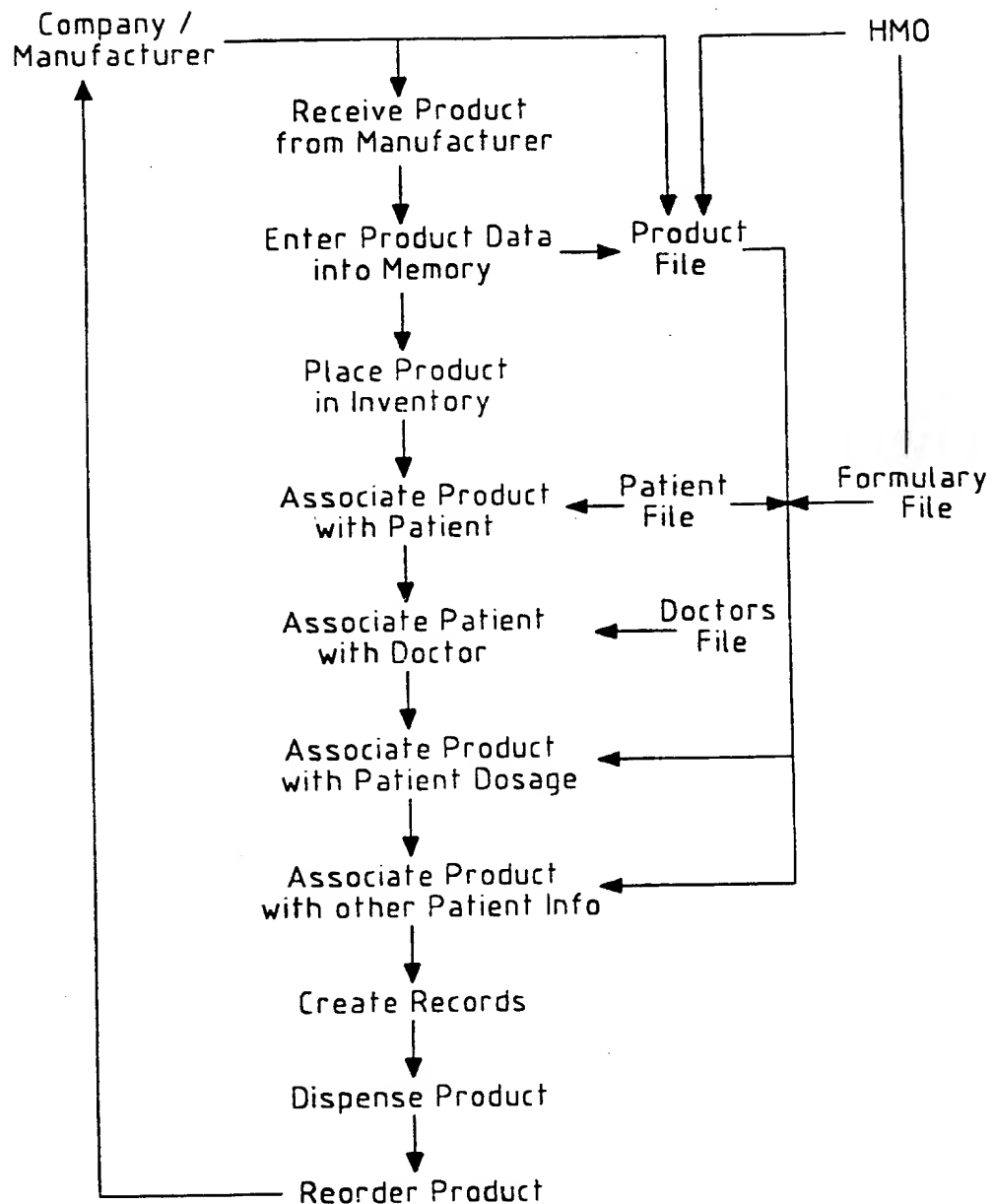


Figure 4


Each gram contains: 1 mg of Triamcinolone Acetonide in a base containing purified water, propylene glycol, propylene glycol stearate, mineral oil and lanolin alcohol, isopropyl palmitate, polysorbate 60, cetyl alcohol, sorbitan monostearate, polyoxyl 40 stearate, sorbic acid, methylparaben and propylparaben.

NET WT 80 GRAMS

CAUTION: Federal law prohibits dispensing without prescription.

TRIAMCINOLONE ACETONIDE
CREAM USP, 0.1%

NDC 49158-140-21







Figure 5

Inventory - Add, Change and Delete Files	
<input checked="" type="radio"/> Product Name Sequence	<input type="radio"/> Product Description Sequence <input type="radio"/> Category Sequence
Diamox SR: 500mg, 10 Tabs, Acetazolamide, Glaucoma Erythromycin Ointment: 0.1250z, Antibiotic, Antibiotics Flarex 5ml: 5ml, Fluorometholone, Steroids FML: 0.1%, 3.5g, Fluorometholone, Non-Steroidal Anti-Inflammatory	
Pharmaceutical Category Glaucoma	Pharmaceutical Company Alcon Surgical, Inc.
Product Name: Betoptic 0.5% 15mm	Sell: \$50.00
Description 1: Betaxolol-1	On Hand: -2
2: Sgfsdfg	Re-Order: 21
Strength: 0.05%	Product Number: 19
Size: 15mm	Lot Number: N
NDC Number: 1111233	Charge Sales Tax: Y
Cost: \$25.25	Sample Product: N
	Exp. Date: N
	Office Product: N
First File	Last File
Next File	Prev File
Delete	Instructions
Phone Support	Scanned Instruct
Add	Cancel Add
Update	Cancel Changes
Find	Exit

Figure 6



Get Instructions For Inventory Item

Enter up to 80 characters for instructions on using this pharmaceutical

Take four times per day for two weeks.

Done

Figure 7

Enter Up to 10 scanned instruction file names for this
pharmaceutical

1.	one.bmp	6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

Done

Figure 8

Inventory Maintenance									
-----------------------	--	--	--	--	--	--	--	--	--

Help

☒ S
+
T
U

Super drug.: 155

↕

Search for Pharmaceutical by Product Name, Description, or Category

☒ Product Name
 ☐ Product Description
 ☐ Category

Current On Hand Amount

+Incoming Inventory =

New On Hand Amount

99

Find

Update

Exit

Print Bar Code

Phone Support

Single File Selection

First File

Prev File

Next File

Last File

Figure 9

Patient File Maintenance		<div>◀</div> <div>▶</div>	
Help			
Group File Selection <div> Abbott Abbott Acton Acoff Adams Agee Agee Akin Albaugh Albin Alford Allan Albritain Allen Allen Allen Allen </div>		<div> Larry Laura Dorothy Larry Marry Ann Martha Nova Theodore Dorothy Marion Frances Raymond Lou Ella Margaret Nova Russell Walter </div>	
Patient Name: Larry	First Name Larry	MI 	Last Name Abbott
Address: 			
City, St, Zip: Liberty MO 64556			
Telephone: (816) 555-5111	SS # or Acc #: 	Follow Up Date: 	
Single File Selection <div> Prev File First File </div>		<div> Notes Add Cancel </div> <div> Find Delete Update </div>	
Search Prescription History Print Patient Bar Code		Exit Phone Support	

Figure 10A

Find Patient		X				
Patient: <input type="text"/> Search <input type="text"/>						
Swipe a patient's credit card and enter the last four digits of their phone number - or - Enter the patient's phone number including area code - or - Scan the patient's bar code. - or - Scan the department's bar code						
Patient Data Base:						
Double Click Mouse To Select Patient						
FName	MI	LName	Address1	City	Sta	Zip
Mike		Aba	Street	Liberty	MO	64565
Mike	L	Abba	Street	Liberty	MO	64565
Phone Book Data Base:						
Double Click Mouse To Select Patient						
FName	MI	LName	Address	City	Sta	Zip Ph
Display All Patients				Add A New Patient		
Add A Spouse or child				Exit		

Figure 10B


		Search Patient Prescription History	
Help			
		Phone Support	
Larry Abbott			
RX Number:	4189	Date:	06/03/1997
Prescribed:	M4		
Strength:			
Size:			
Quantity:	1		
<div>Exit</div>		<div>Reverse Prescription</div>	
<div>Single File Selection</div>			
<div>First File</div>		<div>Prev File</div>	<div>Next File</div>
		<div>Last File</div>	

Figure 11

☐

Dispense Pharmaceuticals – Scanner Form – DO NOT USE THE TAB KEY!

Help

Doctor:

Patient:

Address:

Dispenser:

Patient Notes:

Product:

Lot#:

Exp. Date:

FU Date:

Instructions:

MM/DD/YYYY

Are the pharmaceutical instructions correct?

Product	Price	Taxable	Amount	Total	Cancel
				0.00	
	First	Next	Previous	Last	Exit

Figure 12























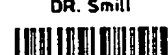



















<p>Physicians</p>  <p>DR. Smill</p>  <p>DR. Jones</p> <p>Dispenser</p>  01  02  03  04  05  06 <p>Instructions Correct?</p>  YES  NO  NO <p>Complete?</p>  <p>COMPLETE</p>	<p>Anti-Oxidant Cream, 30 g  %VA12</p> <p>Anti-Pruritic  %ADC10</p> <p>B-Prox, 8 Fl oz  %DCC37</p> <p>CICA Cream, 6 ml.  %COC01</p> <p>CICA Cream, 12 ml.  %CIC02</p> <p>CICA Lotion, 30 ml.  %CIC03</p> <p>EC Lotion, 50 ml.  %DC20</p> <p>open  00000</p> <p>open  00000</p>
<p>Physicians</p>  <p>DR. Smill</p>  <p>DR. Jones</p> <p>Dispenser</p>  01  02  03  04  05  06 <p>Instructions Correct?</p>  YES  NO  NO <p>Complete?</p>  <p>COMPLETE</p>	<p>Tensile Cream - Small  %DC04</p> <p>Tensile Cream - Large  %DC05</p> <p>Therapeutic Bath & Body Oil  %DC24</p> <p>Therapeutic ChemFree Sunscreen SPF 15  %DC28</p> <p>Therapeutic Gel Sunscreen SPF 15  %DC25</p> <p>Therapeutic Lotion Sunscreen SPF 17  %DC26</p> <p>Tretinoin Cream, .025%  %DC15</p> <p>Tretinoin Cream, .05%  %AA15</p> <p>open  00000</p>

Figure 13

SUBSTITUTE SHEET (RULE 26)

Special Clinic 543 Pratt St. Springfield, MO 65804 (417) 886-1234	Rx: 4442 09/12/1997 Betoptic 0.5% 15mm 0.05% 15mm Betaxolol-1 Sgtadfg EXP: QTY: 1 LOT: \$/EA: \$50.00 NDC Number: 1111233 Take all the time 6-19-97.	Dr. Arnold Janet L. Anderson Street Liberty, MO 64068 (816) 781-0705 Alcon Surgical, Inc
--	--	---

Figure 14

◻

Pharmaceutical Company Maintenance

◀ ▶

Help

Phone Support

↑

Company Name: Tri - Star

Address:

City, ST, Zip:

Telephone: (816) 781-3850

Order line (Modem): 7922046

Order Day: MON

Order Time: 12:15 PM

Last Ordered: 8167819199 FAX

PM AM or PM

Orderes for this company are transmitted to the sponsoring company (Y/N): N

ADD

UPDATE

DELETE

Exit

Single File Selection

First File

Prev File

Next File

Last File

↓

Figure 15

	Tri-Star Online Messaging - Guest	◀ ▶
Please Select a Company:		
2. AKORN		
<div>Send Your Current Catalog And Pricing</div> <div>I Have Product To Return, Please Call</div> <div>Have A Sales Person Call</div> <div>Comments, Questions, Or Messages</div>		
		↑
		→

Figure 16

Last month, our screen saver appeared almost exactly like this month's screen saver, do you know the difference?

The first 100 individuals with the correct answer will be entered in a drawing for a free trip to Hawaii for themselves and three friends.

To enter the contest, complete the following:

1. Enter the correct answer. _____
2. Enter your name. _____
3. With your mouse, push this button ---->

Clue - This month, the man on the screen saved has a blue shirt, what color was it last month?

Figure 17

<input type="checkbox"/>	Y123 Sponsoring Company TSO					◀▶
Dispense	Patient	Department	Inventory	Communication	System	Reports
Exit						Help
						Phone Support

Figure 18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/19808

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G 06 F 17/16

US CL : 705/2

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/2, 3, 22, 28; 235/375, 385; 364.478.04, 479.05, 479.06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	US 5,713,485 A (LIFF et al) 03 February 1998, see entire document	1-26
Y	US 4,847,764 A (HALVORSON) 11 July 1989, see entire document	1-26
Y	US 4,695,954 A (ROSE et al) 22 September 1987, see entire document	1-26

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

19 NOVEMBER 1998

Date of mailing of the international search report

29 JAN 1999

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

ROBERT WEINHARDT

Telephone No. (703) 308-3900

THIS PAGE BLANK (USPTO)